APPENDIX C

I-PLAN

for

TRANSPORTATION

TRANSPORTATION IMPLEMENTATION PLAN

1. EXECUTIVE SUMMARY

The Transportation framework dataset is critical to Idaho's geospatial data infrastructure. Hundreds of organizations depend on information about Idaho's roads in order to transact daily business to meet mission goals. Transportation networks are multi-modal, bi-directional, and complex. To enhance the plan's viability, a phased implementation approach is advocated. The initial effort will focus on state and local roads and basic information about those roads. Gradually, additional detail and more transportation modes will be initiated and integrated in a logical progression. Ultimately, all transportation modes and a more robust set of attributes will be part of the framework dataset.

To insure the greatest accuracy and currency, data will be gathered, maintained, and documented at the organization with primary responsibility for the particular transportation features. Where that ideal is not possible, other organizations will be invited to undertake the responsibility. If areas without Stewards remain, the Implementation Team will do its best to fill in any gaps.

Data sharing and access issues will be addressed through a distributed network and leverage the existing robust capabilities of INSIDE Idaho, the state's official geospatial data clearinghouse. Sufficient and stable funding is essential to the successful implementation of the plan. Accountability is built into the implementation strategy, and cooperation will be rewarded consistently and reliably. Meeting Idaho's burgeoning needs for accurate, current, and comprehensive transportation data is critical to efficiently and effectively managing the challenges of today and tomorrow.

2. DESCRIPTION

2.1 Theme Description

Transportation systems are complex, and any representation of the transportation network will necessarily be complex. The transportation network is multi-modal, bi-directional, and constantly changing. Numerous entities are involved in planning, creating, maintaining, and obliterating transportation corridors. For these and other reasons, creating and maintaining a current statewide transportation framework dataset is a challenging task.

There are several transportation modes available in Idaho: motor vehicle, airplane, railroad, barge, bicycle, and foot. The majority of transportation funding is targeted to roads primarily supporting motor vehicle travel; thus, data gathering and maintenance are focused on roads. The Idaho Transportation Department has responsibility for all federal and state highways (the "state roads"), while a variety of entities have responsibility for all other public roads (the "local roads").

Due to the diversity of road authorities in Idaho, road data is gathered and used for a variety of business purposes. There are nearly 300 organizations involved, including federal and state agencies, tribal governments, councils of government, counties, metropolitan planning organizations, cities, highway districts, and private entities. Due to the array of business purposes and the range of resources available to each organization, a hodgepodge of spatial road data has been collected of varying quality, completeness, and currency, almost none of which can be used together without significant additional investments in time and effort. This plan has been developed to improve the quality, quantity, usability of, and access to road data in Idaho.

Keeping in mind the evolutionary nature of this plan, some essential components of the Transportation I-Plan are:

- Initial through ultimate scope and content of geometry
- Initial through ultimate core and optional attributes
- Initial through ultimate data model
- Standards for data capture using GPS
- Standards for data integration from multiple sources
- Guidance for data integration from mixed scales
- Guidance for crosswalks from Authors and Stewards to Integrator
- Standards for data documentation
- Identification of methods and opportunities for funding the plan
- Identification of an organizational structure to support the plan
- Identification of essential services necessary to support the plan, including education, training, and technical assistance.

2.2 Vision Statement

In order to achieve greater benefits for similar levels of investment, this I-Plan and the documents flowing from it will provide a consistent, common set of standards and guidelines to

produce a stable, reliable base upon which to support the multiplicity of business needs. This plan and related documents will enable widely dispersed efforts, both in time and space, to fit together, gradually forming an integrated, seamless, scaleable statewide road centerline database. The resulting database will be known as the Idaho Road Centerline File, or IRCF.

The Transportation I-Plan focuses on the development and maintenance of the IRCF, which will initially consist of centerline geometry and core attributes for state and local roads. Core attributes will include a unique identifier enabling other databases to attach to the centerline "backbone." Optional attributes will support emergency dispatch, road management, and general planning purposes. A linear referencing system will provide a consistent methodology for locating objects (such as signs) and events (such as accidents) along the centerlines. It is envisioned that other modes of transportation and additional attributes will be added to the dataset once the initial content is complete.

Section 2.3 Interdependencies with Other Framework Data Layers

The IRCF is one of several statewide geospatial data development efforts that will be guided by the Idaho I-Plan. Good registration among the various framework layers is a common interdependency. Registration of the transportation layer is especially crucial for the cadastral layer and significant for many of the other layers. Besides registration, many business purposes rely on current, comprehensive datasets of more than one framework layer. For instance, both cadastral and transportation are necessary to support enhanced 911 services. Effective wildfire management may require transportation, orthoimagery, elevation, and cadastral datasets. In these cases, having all the necessary datasets available is essential for generating information crucial to decision makers.

A brief discussion of some IRCF dependencies on other framework layers and vice versa follows.

Section 2.3.1 IRCF dependencies on other framework data

Road centerlines can be captured from plat maps early in the development process. With coordination, road centerline updates can be developed coincidentally with cadastral layer updates in order to provide the most current possible representation of the transportation network. This would facilitate the deployment of 911 services in case of a construction accident.

Section 2.3.2 Other framework data dependencies on the IRCF

The cadastral layer depends on the transportation layer in key ways. For instance, road centerlines are often used as monuments in parcel legal descriptions. The boundary framework data frequently relies on roads. For example, roads are referenced in describing many governmental units, and address ranges are used to identify political boundaries.

These are only a few ways in which the framework layers interact. Other dependencies are identified in other framework themes of this I-Plan.

3. BENEFITS AND RISKS

3.1 Driving Issues

There are nine major public issues that are impacted and supported by the development of an integrated transportation framework data layer.

- Maintenance and operation of a local transportation system is improved by the development of standard database applications supporting GASB34 and meeting federal and state reporting requirements.
- Emergency management can be subdivided into emergency response (E-911) and disaster planning.
- Law enforcement includes incident reporting and surveillance tracking.
- E-government service delivery is improved by information regarding construction and maintenance of existing roadways that could include construction schedules and the right of way designation for laying telecommunication networks.
- Business location services for prospective businesses and industries includes marketing tools to display and analyze the state's transportation network, facilitating economic development.
- Transportation safety issues can be evaluated by the analysis of the road network with other data including landslide, flooding, and pavement condition data.
- Long-range transportation planning requires an integrated dataset to project future growth of transportation needs in the state.
- Scarcity of resources creates ever more urgent need for eliminating duplication of effort and spreading the benefit of data infrastructure investments to as many agencies as can benefit from them.
- Public land management benefits with support for recreation and maintenance.

Each of these issues requires transportation data, yet no single organization is responsible for collecting and maintaining this information. Most of Idaho's road jurisdictions collect and maintain information about their road network. These datasets cover a variety of scales, geographic areas, and are described by various data dictionaries. They were developed based on a defined set of agency project information requirements. Since these requirements are so varied, the resulting datasets are also extremely varied. None of these datasets are comprehensive enough to include all the roads over all areas of Idaho.

Standard methods and processes for data collection, sharing, storage, and maintenance are needed in order to leverage investments in transportation data. Without putting these standards and processes in place, Idaho cannot effectively deal with these pressing issues.

3.2 Risk Analysis

There are several different types of risks that are associated with the development of this framework data plan for transportation. Risks include issues of stakeholder participation, costs associated with participating in this plan, data ownership, data integration, and breaking through institutional and technical barriers.

- Stakeholder participation includes issues related to redundant data collection and funding multiple agencies to collect the same information.

- Issues associated with cost include analysis of legal costs, sharing costs, and safeguarding data costs.

- Data ownership includes issues related to licensing, data maintenance and update, and the development of mechanisms for sharing timely and accurate information. The plan must ensure a consistent approach across organizations for the updating and sharing of this information.

- Data integration includes issues related to redundant datasets, transparency between datasets, and the development of a systematic assessment of needs for additional data and existing data quality.

- There are a number of institutional and technical barriers to achieving this transportation framework vision in Idaho. Surmounting them can be difficult. The institutional and technical barriers to address are:

    - Integration and conflation of data from different sources and systems with different operational definitions of what a road is, different segmentation criteria, and different spatial and temporal accuracies
    - The need for framework data to interface with specialized and/or proprietary applications (for example, geocoding)
    - Building consensus as to the content of a common framework dataset
    - Ever-changing needs and expectations of the stakeholder community
    - Resources and funding requirements

In order for this plan to be successful, the stakeholder community must face these risks and promote a plan that addresses risk by promoting a consensus-seeking process allowing for the development of a multi-purpose transportation framework dataset in Idaho.

3.3 Benefit Analysis

It is the goal of this transportation framework data plan that Idaho agencies have access to information that represents the location and extent of transportation features that is complete, consistent, and current. In Idaho, state and federal agencies, local governments, special use districts, utilities, and private industry have all made progress in developing transportation datasets and in many cases associated digital road centerline maps. The primary benefit in developing and adopting a framework transportation data plan is that Idaho can take advantage of existing resources to build an integrated transportation dataset.

The main objective of this plan is to reduce the number of redundant project-level databases that decay over time and substitute a transportation framework dataset that is accessible, current, and responsive to varied planning-level business needs of numerous organizations with pieces of the

transportation puzzle. Consequently, the transportation framework dataset fosters the use of the best available data and relies on data sharing mechanisms with the appropriate source to maintain its currency.

At the same time, it is expected that targeting resources to implement this plan will leverage the current and future investment by creating a whole that is more than the sum of its parts substantially earlier than would otherwise be possible. Achieving the vision sooner rather than later or not at all will help realize an earlier and greater return on investment.

It is important that all stakeholders acknowledge that a transportation framework dataset is not intended to be a replacement for their transportation databases, so it does not have to, nor should it, contain the detail and robustness to satisfy all their requirements. This complete representation of the road network in Idaho would be useful for spatial analysis by organizations that want to use transportation data but who do not maintain a transportation database. An additional benefit exists for organizations that maintain one or more transportation databases for their region of interest but find it difficult to obtain current data from other organizations responsible for maintaining roads within the same region.

After the implementation of this plan, organizations will query the state's clearinghouse for jurisdictions within their region for transportation features within specific time periods. Typically, over 60 percent of any GIS analysis involves the collection and conditioning of the required data. This percentage will be dramatically reduced after implementation of the plan. Ultimately, this more direct and effective way of obtaining spatial data will increase efficiency and effectiveness in our public agency decision-making processes.

4. INVENTORIES

4.1 Stakeholders

Transportation data has a large community of stakeholders composed of public, private, and tribal entities, which create, maintain, enhance, and use digital transportation data. It should be noted that not all stakeholders directly generate framework data but would benefit from the existence of a common framework dataset. See Appendix A for a list of selected stakeholders.

4.2 Data Sources

Based on a preliminary ITD study, over 100 agencies have indicated a future intention to create and maintain framework transportation data. Although the list is not comprehensive, it provides a good starting place for understanding the scope of planning and coordination efforts that will be necessary to realize an integrated transportation framework layer in Idaho. Appendix A identifies stakeholders that are Authors.

4.3 Current Status

Ninety-two cities, 64 highway districts, 33 counties, plus state and federal agencies, have maintenance jurisdiction for over 46,500 miles of roadway in Idaho. Forty-four counties and 201

cities possess jurisdiction for street addressing. All counties are responsible for disaster response plans that heavily depend (explicitly or implicitly) on transportation framework data. Each entity has generated data to facilitate meeting its responsibilities without the benefit of a guiding vision, technical support, or standards. Although the investment in data has been substantial (well over $10 million), we are far from our vision of an integrated, scaleable, statewide transportation database. Duplication of effort, a variety of scales, indeterminable accuracies, different data collection equipment and methods, and a lack of collaboration are all contributing factors. Implementing this plan will address these issues.

4.4 Business Needs

Transportation decision makers need timely, accurate, and appropriately scaled information to support the decision process. The first step, data acquisition, is fraught with obstacles and frequently futile due to unavailability, lack of documentation, and variability of content. In order to address these shortcomings for the greatest gains, this plan advocates setting priorities for developing transportation framework data primarily based on the ability to fulfill current and projected business needs of the largest number of stakeholders satisfying the most compelling driving issues. Appendix B sets forth an inventory of business needs grouped by driving issues.

4.5 Challenges

The unique challenges we anticipate encountering in implementing this plan are:

- Balancing the diverse needs of many stakeholders
- Gaining sustained support and stakeholder participation
- Acknowledging and accommodating a range of participation levels by stakeholders in light of the likely need to modify existing business practices, the wide variation of resources available to each, and the pressures of ongoing data collection and reporting
- Providing a consistent guiding presence to foster assurance of the appropriateness, accountability, feasibility, and stability of the I-Plan effort.

This plan supports the use of measured incentives to modify historical business practices and to develop new ones that support plan implementation. As with all projects of this nature, communication, coordination, support structure, and funding challenges must also be effectively addressed.

5. STANDARDS

5.1 Introduction

The I-Plan transportation standard is provided as a guideline to support the development of transportation network features that are both relevant and helpful to the daily activities of local road jurisdictions. This standard provides a framework for the development of location referencing systems, topological networks, and data attribution models. The transportation network standard will assist local road departments with the development of electronic datasets designed to facilitate the management of assets, activities, and incidents on and adjacent to their roadways. If local transportation jurisdictions elect to contribute to the I-Plan, then local

transportation datasets can be integrated to a continuous and contiguous statewide transportation fabric.

As an outcome of daily operational and maintenance work tasks, local road jurisdictions are uniquely situated to account for the accuracy and currency of road transportation data. In addition, the local road jurisdiction business responsibilities would benefit from comprehensive road datasets. However, due to the rural character of Idaho, many road jurisdictions lack the manpower, training, and resources necessary to assemble and maintain sophisticated geospatial datasets. Another challenge will be to develop a set of geospatial standards that simplify data entry and maintenance while supporting federal and state data conflation goals. To assist in meeting this challenge, transportation standards objectives are set forth below:

- The transportation standard shall support the development of a transportation network that can be constructed and maintained on the local level and integrated statewide.
- The transportation standard shall recognize and encompass existing federal and state geographic standards and data models.
- The transportation standard shall be designed to support day-to-day operational requirements of local transportation agencies.
- The development of a transportation data standard shall be flexible and portable to the technological platforms of tomorrow.
- The development of transportation data standards shall support simplified data entry.

5.2 Review of Existing Standards and Related Efforts

Prior to developing a state transportation data standard, a review of selected federal and state transportation data guidelines is warranted and will provide a useful template in the development of standards. Some transportation standard initiatives currently underway are discussed below.

FGDC Standards

NSDI Framework Transportation Identification Standard
In general, this standard develops an attribute model that supports the translation of transportation networks between horizontal and vertical datum while maintaining the network topology. This standard requires the assignment of unique identifier for arcs and nodes, which are maintained throughout the usable life of the dataset. Also described in the standard is a rule set for network topology defining arc segmentation and node placement.

The NSDI Framework Transportation Identification Standard is the only software-independent, nationally applicable, multi-jurisdictional standard available for consideration at this time. Standards that are recommended and adopted must be current with federal regulations and support the NSDI standard.

Spatial Data Transfer Standard
The objective of this standard is to support the transfer of dissimilar geo-spatial datasets between distinct application environments.

SDTS for Transportation Network Profile (TNP)
To support the transfer of non-planar vector data characteristic of transportation networks between platforms while maintaining topology.

Facility Identification Standard
The proposed by the FGDC Facilities Working Group is tasked with the development of standards for locating and inventory of facilities along transportation networks.

Ground Transportation Data Content Standard
The development of a common data dictionary model for transportation features.

Address Content Standard
The development of this standard is to support consistency and inter-changeability of address information to support a variety of location and geo-coding activities.

National Imagery and Mapping Agency (NIMA)
Vector Product Format (VPF)
Is a standardize data schema constructed to support transfer and maintenance of military cartographic data.

Geographic Information Framework
Data Content Standards
The fundamental goal for this standard is to facilitate the exchange of geospatial data associated with road networks. The intent is to establish a common road transportation database for public and private entities, and to increase efficiency in compiling nationwide road network coverage.

GIS for Transportation – Research Community
GIS-T Data Models

UNETRANS (Unified Network Transportation) Data Model
The UNETRANS Data Model is a product of the Unified Network for Transportation data model consortium. This is a collaboration that includes both public and private enterprise. The fundamental intent for the development of this data model is to support the simplification of GIS–T project implementation and to encourage consistency in database design and data sharing.

Intelligent Transportation Systems
Conceptual Models

To be reviewed.

European Standard

Geographic Data Files

A class model standard used to encapsulate road networks with road assets, activities and incidents.

State Geospatial Programs

Road Centerline and Concept Papers

South Carolina Information Resource Council
Geographic Information System (GIS) Subcommittee
Road Centerline Attribute Content and Spatial Data Development Standards

Arkansas State Land Information Board
Arkansas Centerline I-Team Subcommittee
Arkansas Centerline File Standard

Washington Transportation Framework Project
WA-Trans Business Needs Document
September 5, 2002

Center for Urban Studies College of Urban and Public Affairs
Portland State University
White Paper on Issues and Strategies for Building a State Transportation Framework

Idaho Transportation Data Model Share-Code
Based on Utah's Canyon Country Partnership Transportation Share-Codes

5.3 Content of Transportation Data Standards

The transportation network model shall consider the following elements to ensure a data standard that meets the previously stated objectives.

Reference Network Layer

Topology/Connectivity Requirements

The transportation network shall consist of segments and nodes. The network shall be constructed with connectivity – the network shall have topology.

Line Segmentation Rules

The line segments shall begin and end at intersections.

Rules Required for Segmentation

Bridges and tunnels

Attribute Requirements

Unique Identifiers

All line segments shall have a steady line segment code value. Refer to FGDC-STD-999-1-2000

Management of Identifiers

A set of rules shall exist to manage and retire unique identifiers.

Addressing Schema

A set of specifications on addressing systems

Automation versus Manual Update

Application development to support attribution

Advancements in Network models

Relaxation of network planer requirements

Complex edge features

Route Feature Layers

Location Referencing

Horizontal, Vertical and Linear Datum

Events Layer

Assets Layer

5.4 Standards References

Making Data Simply Visible: Idaho Transportation Department Information Strategy Plan and Enterprise Data Model, Idaho Transportation Department. October 2001.

ITD Enterprise Location Referencing System – Project an Enterprise Location Referencing Assessment Version 2.0. December 18, 2002.

ArcGIS Transportation Data Model (Draft) ArcGIS Data Models. ESRI and Regents of the University of California.

NSDI Framework Transportation Identification Standard – Public Review Draft. Ground Transportation Subcommittee Federal Geographic Data Committee. December 2000.

White Paper on Issues and Strategies for Building a State Transportation Framework, Kenneth J. Dueker Professor of Urban Studies and Planning, Center for Urban Studies College of Urban and Public Affairs. Portland State University. April 2002.

Arkansas Centerline File Standard. Arkansas Centerline I-Team Subcommittee for the Arkansas State Land Information Board. September 2002.

6. IMPLEMENTATION STRATEGY

6.1 Implementation Approach

The implementation approach for the development of the IRCF includes three stages: developing standards, institutionalizing the program, and integrating and maintaining the framework dataset.

The first stage in data development requires that standards be adopted to meet the needs of local road jurisdictions which are maintaining road centerline files or which are interested in collecting road centerline features and attributes to manage their current and future business needs. These standards must also support the NSDI, the National Map, and the efforts of the U.S. Census Bureau to create a nationwide transportation network. Standards that need to be created and adopted include standards for the collection of road centerline data, data dictionary for the collection of core attributes to support the sharing of data, and model contract language to support the consistent collection and creation of road centerline data.

In order for the state of Idaho to develop and maintain a road centerline file, there must be changes to existing policy in order to institutionalize the program. The second stage in the development of this framework dataset is the evaluation and recommendation of changes to policies and state code that impede the sharing of data among agencies and organizations. During this stage, we will also identify data Stewards, an Integrator, and funding mechanisms for supporting the integration and distribution of this dataset to all stakeholders.

The final stage in this implementation plan is a program that supports the vision of providing an accurate and timely road centerline file to all appropriate organizations while reducing the state's investment in datasets that do not meet standards or promote an integrated transportation dataset in Idaho.

6.2 Implementation Team

Currently, Idaho does not have an agency or group of agencies with responsibility for creating and maintaining a transportation framework dataset. Yet, it is clear that many agencies and organizations would benefit considerably from access to such a dataset. In order to identify the proper roles and responsibilities, this plan advances a phased implementation approach that requires participation from many stakeholder groups to realize the vision.

The initial implementation team will be responsible for developing standards for data collection, integration, and distribution of the IRCF. This team will be made up of the following agency representatives: U.S. Geological Survey representing the National Map program, the U.S. Census Bureau representing the TIGER data, a representative from the Local Highway Technical Assistance Council, the director of the state clearinghouse, INSIDE Idaho, and staff from the Idaho Transportation Department's Planning Division. The implementation team will work closely with the Transportation Technical Working Group whose role will be to review the proposed standards, shepherd them through the approval process and, once adopted, promote their use by agencies interested in contributing data.

Based on the work of the initial implementation team, a new team (the Implementation Team) will be created with the responsibility for identifying an agency or group of agencies that can take responsibility for integrating and maintaining the IRCF. Members of this team will be made up of state, local, and tribal government representatives. They will recommend changes to policies and Idaho Code that will promote the institutionalizing of a transportation framework dataset by specifically identifying changes that are necessary to authorize statewide coordination. They will also be responsible for developing a financial plan for the collection, integration, maintenance, and distribution of this dataset.

6.3 Data Development

The Implementation Team will develop standards and best practices for the collection and sharing of data that will support the development of the IRCF. These standards will specify road centerline collection methods and will define core attributes that will be required for each dataset submitted by Stewards. Data development priorities will be based, in part, on the needs of organizations supporting the National Map Program and willing to share data to develop the IRCF.

Potential Stewards of the IRCF include city, county and tribal governments, other local highway jurisdictions, the Idaho Transportation Department, other state agencies that collect and maintain data about roads, and large corporate landowners/managers, including private timber companies, utilities, railroads, and federal agencies such as the U.S. Forest Service and Bureau of Land Management. Our goal is to identify a Steward for each unique data contribution so that the

entire transportation network benefits from a consistent, accountable presence. Some Authors that current collect data may be able to reduce or eliminate data collection or maintenance efforts. Authors that continue to collect and/or maintain data are encouraged to contribute that data to the appropriate Steward.

Using the IRCF as a common foundation, additional data, such as traffic counts, culverts and bridges, signage, collisions, and bus routes, can be created and integrated to it in the enhancement phase. Other transportation modes can be added as well. Because many stakeholders creating transportation framework data will not have access to sophisticated skill sets and technologies, the method for accessing, sharing, and updating the data must be simple.

6.4 Data Maintenance

The data will be maintained by the entity having primary responsibility for road data collection, defined as the Author (see Definitions section). The Author is typically identified as the agency with jurisdiction over a particular road segment. Issues of multi-jurisdiction responsibility on a single segment and no specified road authority for a road segment will need to be resolved by the Implementation Team. The data will be maintained based on standards developed by the Transportation Technical Working Group and adopted by the process authorized by ITRMC based on the recommendation of the IGC.

6.5 Data Integration

Since the data will be maintained by many organizations, procedures will be developed for integrating the datasets. In addition, a single organization will be identified and funded to act as Integrator. It is essential that the Integrator receive sufficient funding to carry out the duties required for the successful execution of its role.

The Idaho Transportation Department has received a grant from the U.S. Geological Survey National Map Program to pilot a project that studies methods for the integration of road centerline files from multiple jurisdictions in one region. The goal of this pilot is to define methods for data integration. The results of this project will be used to make recommendations on how road centerline data is integrated into a seamless road network in Idaho.

6.6 Data Distribution

Data distribution services will be provided by the state-designated clearinghouse, INSIDE Idaho. Framework data Stewards shall create, maintain, and publish metadata for their data and provide it to the state clearinghouse. The data can be located on INSIDE Idaho servers or available by link to other public sites for downloading.

6.6 Implementation Schedule

The implementation schedule has yet to be determined. Determination will be based on the ability to obtain sufficient funding and stakeholder support.

6.7 Cost Estimates

The National States Geographic Information Council (NSGIC) has estimated the cost for the creation of an address range centerline file at a smaller scale than 1:24000 for all 50 states. NSGIC used an average national cost of $29 per linear mile and applied it to total rural and urban road miles. Idaho's 46,456 road miles generated a total cost of $1,347,224. This is a rough estimate, and costs would fluctuate with the standards imposed for accuracy, attribute content, and scale, all of which have yet to be determined.

7. RECOMMENDATIONS

7.1 Recommendations for Initiatives

Recommendations can be grouped into two categories: Institutional and Financial. Although no specific recommendations have been developed thus far, areas of inquiry have been identified.

- Does current funding for transportation data provide for time and money to be spent on framework creation?
- Should future funding require agencies to build certain data to framework standards?
- How can current resources (personnel, money) be allocated differently?
- How can we develop a sustainable structure to carry out the vision of this plan?

7.2 Recommendations for Data Stewardship and Integration

The most appropriate Integrator for the IRCF in the State of Idaho is the Idaho Department of Transportation.

7.3 Recommendations for Legislative Initiatives

None at this time.

7.4 Recommendations for Policy, Rule, and Procedural Changes

None at this time.

7.5 Recommendations for Standards

ITD is currently reviewing proposed model contract language, GPS data collection and documentation standards, and road centerline data collection standards. After due deliberation and acceptance by ITD, the proposed standards will be distributed for comment and, ultimately, recommended for adoption by ITRMC.

Remaining standards issues to be addressed by the TTWG are:

- Segmentation Logic
- Road Range Attribute Definition

- Linear Referencing System

A significant issue that cannot be addressed by the TTWG pertains to overall GIS standards. It is our recommendation that GIS standards be promptly developed by IGC and submitted to ITRMC for approval.

8. PLAN UPDATE CYCLE

This Transportation I-Plan will be reviewed at least annually by the Transportation Technical Working Group. Updates will be submitted to the I-Team coordinator for inclusion with the overall Framework Data Implementation Plan for Idaho.

APPENDIX A

Transportation Data Stakeholders

Name of Stakeholder	Entity Type	Group
ARMY CORPS OF ENGINEERS	Federal	Enhancers
NATIONAL PARK SERVICE	Federal	Authors/Enhancers
USDOI BLM	Federal	Authors/Enhancers
USDOI BOR	Federal	
US CENSUS BUREAU	Federal	Steward
US EPA	Federal	
US F&W	Federal	Consumer
USFS REGION 1	Federal	
USGS	Federal	Steward
USFS REGION 4	Federal	
USFS - Clearwater Forest	Federal	Authors/Enhancers
USFS - Nez Perce Forest	Federal	Authors/Enhancers
USFS - CdA Forest	Federal	Authors/Enhancers
BUREAU OF DISASTER SERVICES	State	Enhancer/Consumer
DEPT. OF AGRICULTURE	State	Consumer
DEPT. OF COMMERCE	State	Consumer
DEPT. OF FISH AND GAME	State	Consumer
DEPT. OF ENVIRONMENTAL QUALITY	State	Consumer
DEPT. OF LANDS	State	Authors/Enhancers
DEPT. OF WATER RESOURCES	State	Authors/Enhancers
STATE POLICE	State	Enhancer/Consumer
DEPT. OF PARKS AND RECREATION	State	Enhancer/Consumer
STATE TAX COMMISSION	State	Consumer
IDAHO TRANSPORTATION DEPT	State	Authors/Enhancers
COEUR D'ALENE TRIBE	Tribal	Authors/Enhancers
KOOTENAI TRIBE OF IDAHO	Tribal	Authors/Enhancers
NEZ PERCE TRIBE	Tribal	Authors/Enhancers
SHO-BAN TRIBE	Tribal	Authors/Enhancers
COUNTY GOVERNMENTS (44)	Local	Authors/Enhancers
County Departments can include		
Planning and Zoning		
Building		
Elections		
Sheriff		
911 Center		
GIS/Mapping		
Road and Bridge		
CITIES GOVERNMENTS (201)	Local	Authors/Enhancers
City Departments can include		

Name of Stakeholder	Entity Type	Group
Planning and Zoning		
Building		
Police		
Road and Bridge		
Public Works		
HIGHWAY DISTRICTS (64)	Local	Authors/Enhancers
SCHOOL DISTRICTS (112)	Local	Enhancers
BANNOCK PLANNING ORGANIZATION	Metro Planning Organization	
COMPASS		
BSU	Educational	Enhancer/Consumer
NIATT	Research	Consumer
TITLE COMPANIES	Private	Consumer
SURVEYORS	Private	Consumer
REALTORS	Private	Consumer
MAIL/SHIPPING SERVICES	Private	Consumer
TIMBER COMPANIES	Private	Authors/Consumers